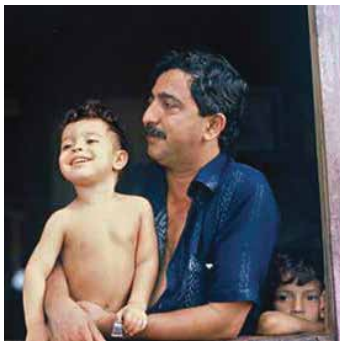
GEJ Global Environmental Justice Documentaries

TEACHER'S GUIDE



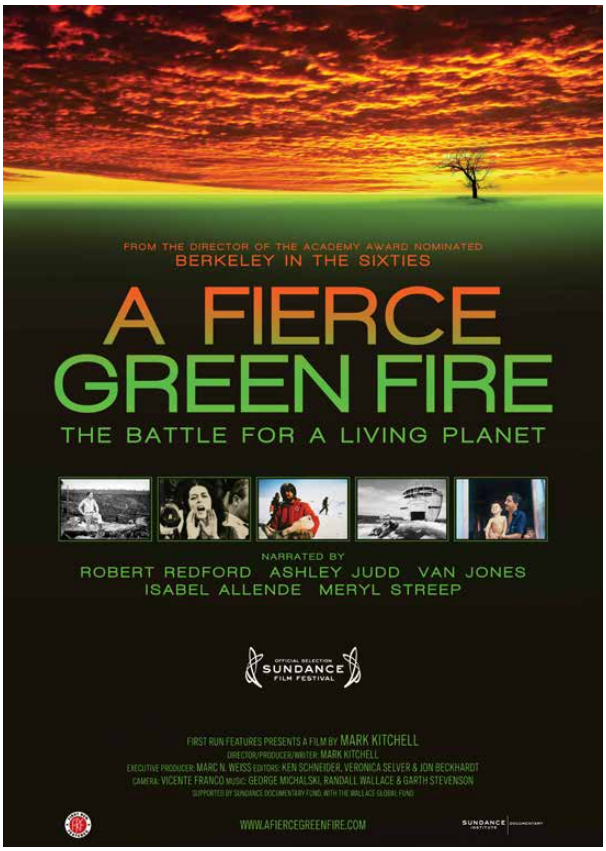
A Fierce Green Fire

The Battle for a living planet

2014 • 100 minutes • Directed by Mark Kitchell • Distributed by Bullfrog Films

A Fierce Green Fire: The Battle For a Living Planet is the first big-picture exploration of the environmental movement—grassroots and global activism spanning fifty years from conservation to climate change. From halting dams in the Grand Canyon to battling 20,000 tons of toxic waste at Love Canal; from Greenpeace saving the whales to Chico Mendes and the rubbertappers saving the Amazon; from climate change to the promise of transforming our civilization… the film tells vivid stories about people fighting—and succeeding—against enormous odds.

Narrated by Robert Redford, Ashley Judd, Van Jones, Isabelle Allende, and Meryl Streep.



THIS TEACHING GUIDE PROVIDED BY BULLFROG FILMS AND WRITTEN BY

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> *Melding history, science, and up-to-the-minute urgency,* A Fierce Green Fire *is a clarion call that's passionate and provocative.*
>
> **Boston Globe**

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Documentary filmmaker Mark Kitchell

DIRECTOR'S STATEMENT

Like *Berkeley in the Sixties*, my previous work which has become one of the defining films about the protest movements that shook America during the 1960s, *A Fierce Green Fire* started with the idea that a big-picture synthesis of environmentalism was needed. It's the biggest movement the world has ever seen, yet so broad and diffuse that we've lacked a larger sense of what it was about. This film is meant to take stock, explore the historical meaning of the environmental movement, and witness where we've come from and where we are heading.

The first iteration of this project was a six-hour series. Edward O. Wilson, the eminent biologist who was advisor to the film, told me we'd never get something so big funded—and, if we did, no one would watch it. He urged us to focus on five of the most important and dramatic events and people, to build a shorter and more entertaining film around them. We selected:

- David Brower and the Sierra Club halting dams in the Grand Canyon
- Lois Gibbs and the people of Love Canal battling 20,000 tons of toxic waste
- Paul Watson and Greenpeace saving whales and baby harp seals
- Chico Mendes and the rubbertappers saving the Amazon rainforest
- (What else could we end on?) The twenty-five year battle to deal with climate change

> *Truly riveting. A sweeping history of the environmental movement, 'A Fierce Green Fire' is both a cautionary tale and a triumphant one.*
>
> **The Washington Post**

We discovered that each is emblematic of a part as well as an era of environmentalism, so we built those five main stories into broader acts that encapsulate whole strands of the movement. We shaped the acts like an hourglass. Each begins wide, looking at origins and context. Next we narrow in on the main story more fully told. Then the acts open up again to explore ramifications and evolution of that strand and how it connects to the next phase of environmentalism.

The film went through two rounds of shooting interviews, gathering archival material, script- ing and editing a rough-cut. That's how documentaries get made, an intense creative process of trial and error. Some stories like wildlife and biodiversity fell out. Other issues like population didn't have enough activism to fit. The act on climate change was put off until there was more funding. The interviews were shot just after COP 15 in Copenhagen, a pregnant and conflicted time. We worked on the acts in pieces and I wasn't sure it would all connect to become the syn- thesis I had in mind. By May of 2010 we had a cut of the full film. It showed a lot of promise. The middle acts were working well but the first and last acts needed to be taken further.

The fine-cut phase turned into a third round of interviews, scripting and editing, which led to extensive improvements. By the fall of 2011 we had a 135-minute cut. Consensus feedback said it was too long. Upon acceptance to Sundance Film Festival, two great editors working with me cut the film down to 110 minutes and shaped it as a whole. That cut got a great response. Even so, in the completion round we cut another fourteen minutes—took the film the final 5% of the way, added five celebrity narrators, revised the opening and closing, licensed and mastered archival film, and polished *A Fierce Green Fire* into a work of beauty.

I think we succeeded in capturing that big-picture synthesis of the environmental movement, and I hope you find it useful. We made it for the generations who will live through the storm, and figured they would want to know how things began and that someone fought for their future.

— Mark Kitchell

FILM OVERVIEW

Of the many challenges facing mankind in the 21st century, perhaps none are as crucial and pervasive as those posed by current environmental crises. The formulation of collective solutions to problems ranging from global resource depletion and biodiversity loss to industrial pollution, species extinction and climate change is at once urgent and necessary. Understanding the history of one of the most important developments of the 20th century, the environmental movement, is key to this process. Through the stories of ordinary men and women, *A Fierce Green Fire: The Battle For A Living Planet* explores fifty years of grassroots and global activism, tracing the history of environmentalism from the conservation movement to the crucial present-day controversy surrounding climate change.

The history of the environmental movement is complex. Its evolution is not necessarily linear, and its roots extend beyond lines of race, class, gender, and geography. *A Fierce Green Fire* captures this complexity by highlighting stories and struggles that are reflective of larger trends within the movement, making sense of what sometimes seems like a series of random and chaotic events.

The film accomplishes this through five acts, each of which addresses a particular phase of the movement.

Act 1 examines conservation, from its nineteenth century roots through the 1960s.

Act 2 explores the new environmental movement that arose in the 1970s, with its emphasis on pollution, toxic wastes, and human health.

Act 3 covers the 1970s as well, but instead looks at alternatives, from the back to the land movement to renewable energy, and links them to ecology movements like Greenpeace.

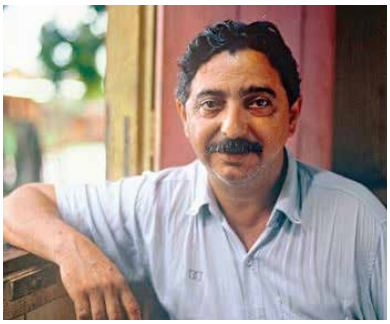
Act 4 unfolds in the 1980s amid global-scale resource issues and crises, and explores environmental movements across the global South, including the struggle to save the Amazon.

Act 5 spans from the 1990s to the present, focusing on climate change, the greatest challenge humanity has ever faced, and the evolution of a bottom-up global movement.

PEOPLE FEATURED IN THE FILM

Featured in the film are thirty-one interviews and historical figures including:

Lois Gibbs – leader of the neighborhood resistance at Love Canal



Paul Watson – Greenpeace activist and later founder of the Sea Shepherd Conservation Society

Bill McKibben – author, activist and founder of 350.org

Paul Hawken and Stewart Brand – ecology visionaries

Martin Litton – staunch opponent of the Glen Canyon dam and other Colorado River dams

Chico Mendes – Brazilian rubbertapper and union leader

Wangari Maathai – Kenyan Green Belt Movement leader and Nobel laureate

Carl Pope and John Adams – leaders of the Sierra Club and Natural Resources Defense Council respectively

Bob Bullard – environmental justice advocate, who closes the film on a universal note, saying: "There's no Hispanic air. There's no African-American air. There's air! And if you breathe air—and most people I know do breathe air—then I would consider you an environmentalist."

USING THE FILM AND TEACHING GUIDE

This teaching guide was written for students in grades 9–12 and is also appropriate for use in college courses. *A Fierce Green Fire* is modular by design, and meant to be viewed in segments as well as in its entirety. The total running time is 100 minutes, and the five acts each run approximately 20 minutes. The guide is designed for five 45–50 minute classes, with one or two acts constituting a class.

Synopses, pre-viewing and post-viewing questions are included for each act—as well as "Beyond the Classroom" activities. We propose that teachers familiarize themselves by reading the appropriate section before class. Prior to screening each act, teachers can pose the pre-viewing questions to the class. After viewing each act, instructors can use the post-viewing questions as a guide for discussion. The teacher may then assign "Beyond the Classroom" activities as homework.

In the "Learn More" section you will find books, articles, films, and internet resources recommended by the film's director, Mark Kitchell. *A Fierce Green Fire* highlights several important chapters of the environmental movement, and the recommended resources are a great way to further your understanding of the history of environmentalism.

In the "National Standards Correlations" section there is a comprehensive list of the ways in which topics explored in the film meet national teaching standards for many disciplines, including U.S. and world history, geography, science, civics, sociology, and economics.

As the first big-picture exploration of the environmental movement, *A Fierce Green Fire* is the perfect supplement to existing history, civics, social studies, geography, economics and science curricula. Finding a sustainable path to the future means reinventing not just the way we make and do everything, but reinventing the way we think about our place in the natural world. It is the greatest challenge of the coming century, and the central cause of generations now on the rise.

We hope this film and teaching guide will help raise consciousness by revealing the scientific, economic, political and social dimensions of environmental crisis and change.

> *Every now and then, some issue arises that is elevated into a stratospheric focus of public attention. It becomes symbolic, and the rallying cry for a whole generation of activists.*
>
> **Doug Scott**

ACT I: CONSERVATION

Concerns about protecting the environment first arose from elite and middle class people in America's growing cities at the turn of the twentieth century. People like Teddy Roosevelt and groups like the Audubon Society worried about the squandering of the nation's natural resources and the destruction of beautiful places and wildlife. Their prescription was "conservation," described by Gifford Pinchot, the first chief of the Forest Service, as the efficient and scientific use of natural resources for the "greatest good to the greatest number of people for the longest time." However, Pinchot's view of nature in service to humans met increasing resistance from others who saw wild places as refuges from stifling industrial cities, where humans could reconnect with nature, the divine, and themselves. John Muir and the Sierra Club wanted to preserve wild places in their natural state. The two sides—scientific conservation and preservation—came to blows when the City of San Francisco proposed to build a dam in the newly designated Yosemite National Park to provide water for the growing city. Ultimately, scientific conservation won out. Hetch Hetchy was dammed and flooded, and the controversy surrounding the dam sparked a new wilderness preservation movement.

Fights over dams continued to shape conflicts between progress and nature throughout the twentieth century. A new conservation movement emerged from these struggles. During the 1950s, the Sierra Club successfully stopped the building of a dam in Dinosaur National Monument. In the process the Sierra Club was transformed into the largest and most powerful environmental organization in the United States and its leader David Brower became one of the most influential environmental activists of his day. To win, however, the group agreed that it would not oppose another dam on the Colorado River in the lesser-known but magnificent Glen Canyon in Southern Utah. When two dams were proposed in the Grand Canyon, Brower and the Sierra Club vowed that there would not be another Glen Canyon--it would be a "fight to the death." Using aggressive media tactics including full-page ads in national newspapers, Brower and the Sierra Club mustered unprecedented public support to "Save Grand Canyon." Timing was everything. Americans had lived through World War II and

enjoyed the opportunities for outdoor recreation provided by the postwar economic boom. The Grand Canyon dam controversy forced many to reevaluate the costs of prosperity and progress. Unlike Hetch Hetchy, Americans rallied to stop the dams.

The conservationists' victory and Brower's departure from the Sierra Club indicated an important shift in the environmental movement at the end of the 1960s. Brower went on to found Friends of the Earth, the first international environmental organization, broadening his work beyond the preservation of wilderness. While the Wilderness Act of 1964 protected more than nine million acres as wilderness, by the end of the decade conservationists were moving beyond preservation toward a more holistic view of the earth that included the relationship between human health and environmental wellbeing. The cultural ferment of the era, combined with the collective experience of witnessing the first pictures of earth from the moon, the polluted Cuyahoga River catching fire, smog in the cities, the Santa Barbara oil spill, and other environmental catastrophes, sparked a new realization of the finite nature of the planet. When millions of Americans gathered in April of 1970 to celebrate the first Earth Day, it was clear that environmentalism had entered a new phase.

PRE-VIEWING QUESTIONS

1. Should basic human needs for things like water and other resources be the most important considerations in thinking about nature? Is nature ever valuable for its own sake?
2. What is the effect of defining some places as "pristine" and "beautiful" and worthy of preservation and other places as suitable for industrial development?

POST-VIEWING QUESTIONS

1. What is "progress?" What did it mean in the early 1900s? Can protecting wild places or not damming a river be part of "progress?"
2. Why do you think environmentalists were successful in stopping the dams proposed for Dinosaur National Monument and the Grand Canyon in the 1950s and 1960s when John Muir and the Sierra Club failed to stop the Hetch Hetchy Dam in the early 1900s?
3. How did environmentalists use images in their public relations campaigns to protect wild places— specifically, how did the Sierra Club use them in its fight to save Grand Canyon? Why were the images so powerful?

BEYOND THE CLASSROOM

1. Many environmentalists consider the building of Glen Canyon Dam on the Arizona-Utah border to be one of the greatest tragedies of the twentieth century. Yet, the dam provides electricity for towns and cities across the American Southwest and the lake that it creates, Lake Powell, provides recreational opportunities for thousands of people. Lake Powell also "wastes" an enormous amount of water to evaporation every year—water that is increasingly precious to the growing populations of Arizona and California—and the dam is predicted to "silt up" in the next few decades rendering it useless. Research these issues and answer the following questions:

   Given the challenges Glen Canyon Dam faces, what is the best course of action for the future? Can the electricity and the recreational opportunities it creates be provided by alternative sources?

2. The great American dams of the twentieth century were built to be like the pyramids of Egypt—permanent testaments to human ingenuity and progress. Yet, in the last decade, many dams have been removed. For example, the Milltown Dam in Montana, Elwha River in Washington, and the Great Works Dam in Maine. Research one of these dam removal projects and answer the following questions:

   Is the removal of dams a step backwards or is it a form of progress? Are there values associated with removing dams today that were not recognized by Americans when the dams were built?

> *When Love Canal came, it was a new segment of the movement. It really was about people and peoples' health. It wasn't that we don't care about the forest, but it was the people-focus that set us aside from other elements that had come before us. If the fish are dying and the birds are dying, we're gonna die!*
>
> **Lois Gibbs**

ACT II: POLLUTION

The publication of Rachel Carson's *Silent Spring* in 1962 transformed how Americans viewed the relationship between industrial progress and environmental and human health. Carson's book sparked widespread public concern and controversy over the unregulated use of chemicals and the effects of toxic pollution on both humans and non-human life. By the end of the decade, Americanshad become concerned with ecological crises plaguing the nation. This unrest culminated on April 22, 1970 when 20 million Americans from all walks of life took to the streets to voice their concern over the state of the environment.

Earth Day 1970 was the largest mass demonstration in American history and ushered in the second wave of environmentalism. This new social movement translated into political action at all levels, including the creation of the Environmental Protection Agency and the adoption or expansion of landmark environmental protection laws including the Clean Air Act, the Clean Water Act, the Endangered Species Act, and the creation of Superfund to control toxic waste. Lawyers working for environmental organizations became the enforcers of the new regulations, suing both polluters and government agencies for violations and lack of enforcement. Industry saw this as a fundamental threat to their business operations, and in response mounted a powerful counterattack that often pitted jobs against the environment.

> *Environmental justice embraces the principle that all people and communities have a right to equal protection and equal enforcement of environmental laws and regulations.*
>
> **Dr. Robert Bullard**

Despite the pushback from industrial America, the issue of toxic waste and its impact on human health did not subside. It reached a boiling point in a place called Love Canal in New York, where 20,000 tons of buried poisonous chemicals caused astronomic rates of stillborn births, miscarriages, and birth defects in the town's population. Led by a young housewife named Lois Gibbs, the residents of Love Canal engaged in a two-year battle with the state and federal governments to be relocated away from the contaminated site. Love Canal launched a new phase of the environmental movement— one that centered on people and their health.

For more information on the Warren County demonstrations search: Warren County toxic waste

Learn more about Dr. Robert Bullard the "father of environmental justice"

Download the The Principles of Environmental Justice adopted by the Delegates to the First National People of Color Environmental Leadership Summit in 1991

Across the United States, hundreds of grassroots groups sprung up to defend their families, homes, and health from toxic pollution in their own backyards. Many of these community activists were inspired by Love Canal, and even more reacted against the rollback of environmental protections by the Reagan administration. Men, women, and children rose up against toxic waste dumps, factories polluting their water resources, oil, coal, and factory farms. Many were African Americans, Hispanics, recent immigrants, and other minorities who realized their communities were bearing the brunt of environmental pollution. These activists began linking race, class, and a lack of political power to disproportionate industrial pollution in their communities, giving birth to the environmental justice movement. Their struggles for basic human rights, including clean air, clean water, and healthy communities continue today.

PRE-VIEWING QUESTIONS

1. What is environmentalism and who is an environmentalist?
2. How is human health related to the health of the environment?
3. What is the purpose of environmental regulation and legislation? What role should the government play in protecting people from environmental harm?

POST-VIEWING QUESTIONS

1. How did the environmental movement that emerged after Earth Day 1970 differ from the first wave of environmentalism? What were the issues, who were the actors, and what tactics did they use?
2. The New York State Health Department referred to the community health study conducted by Love Canal residents as "useless housewife data." How does this compare to how government officials responded to the EPA's study on chromosome damage among Love Canal residents? What do the differences in these responses tell us about the values our society places on science compared to the lived experiences of people? Which data would you trust and why?
3. How did gender, race, and class figure into environmental struggles in the twentieth century? How did this differ from earlier struggles to preserve "nature"?

BEYOND THE CLASSROOM

1. Explore the University at Buffalo-SUNY's online "Love Canal Collections." Using at least one photograph and one newspaper article, analyze the ways in which the issues of Love Canal were portrayed by the media. What do these media representations tell us about public perceptions of pollution, science, the environment, and human health?

2. Using the U.S. Environmental Protection Agency's website, explore the environmental laws and executive orders that help to protect human health and the environment. Choose one to examine in detail. When was this law enacted? How does it protect human health and/or the environment? What federal agencies are responsible for implementation and regulation? And lastly, think critically about how this particular law impacts your health and the places you live, go to school, and recreate.
3. Using the U.S. Environmental Protection Agency's website, explore three different toxics, chemicals, or pesticides regulated by the EPA. What laws are used to regulate these substances? What are their effects on human health and ecosystems?

> *We were asking the question, 'Okay, the war in Vietnam's over. What are we gonna do next?' And the answer to that question was, 'We're gonna start an ecology movement. And the first thing we're gonna do is we're gonna go save the whales.'*
>
> **Rex Weyler**

ACT III: ALTERNATIVES

While environmental consciousness prompted thousands of Americans to organize to protect their homes and communities from toxic pollution and environmental injustices in the 1970s and 1980s, it led others to take alternative paths. The first of these groups blended ecology with the anti-Vietnam War movement's critique of the military-industrial complex. Disillusioned with mainstream American society, they fled to the country to create small-scale experiments in collective living in touch with each other and connected to nature. In imagining a new way of living, they looked for new ways to farm and build their houses. Stewart Brand's The Whole Earth Catalog provided them with information about, and access to, tools that were useful for building passive solar-heated homes, rainwater collection systems, and farming without chemicals.

In its practical and applicable presentation, the Catalog anticipated a larger shift in thinking occurring outside the communes. A new generation of architects, engineers, and scientists developed new technologies that met human needs without sacrificing the environment. Physicist Amory Lovins developed the "soft path" theory of energy use that emphasized energy conservation and renewable sources like wind and solar power. The release of Limits of Growth in 1972, which predicted ecological collapse in the early twenty first century, spurred further development of renewables and prompted millions of Americans to begin moving toward a greener way of living. Federal and state governments created tax incentives and subsidies for research in alternative energy, the auto industry produced more fuel-efficient cars and developed hybrid and electric vehicles, and President Jimmy Carter even put solar panels on the White House roof. But, fatigued by economic stagnation and sacrifice, voters rushed Carter out of office after just one term. Ronald Reagan promised Americans that they would no longer have to give up or apologize for their high standard of living. Under Reagan, subsidies for alternative energy ended and were replaced by renewed federal support for coal, oil, natural gas, and nuclear energy. The United States missed an important opportunity to address looming issues of resource scarcity and pollution in a meaningful way.

While some sought technological solutions to the environmental crisis and others were getting back to the land in the 1970s, a group of Canadian anti-war and anti-nuclear activists focused their energy in another direction: saving whales from extermination. In the process, Greenpeace created an international movement. Committed to nonviolence, they used ships and small boats to put themselves between the whalers and whales, creating powerful images that rallied support for their cause. As their campaigns grew, their tactics became more radical. In 1979, Greenpeace cofounder Paul Watson was forced out of the group for violating its non-violence policy. He subsequently founded the Sea Shepherd Conservation Society, a group that redefined environmental activism by destroying whaling ships around the world during the early 1980s. Their actions rallied global support to end whaling. In 1982, after 10 years of relentless campaigning, a loose coalition of environmental groups and governments around the world persuaded the International Whaling Commission to pass a moratorium on whaling, which became a permanent ban in 1986. Though some whaling continues due to exceptions in the ban, the moratorium is considered to be one of environmentalism's biggest successes. The fight against whaling spurred an international environmental movement. By the end of the 1980s, Greenpeace returned to its roots to fight toxic pollution and nuclear power, testing, and weapons alongside protecting sea life.

PRE-VIEWING QUESTIONS

1. What role should the government play in protecting people, animals, and ecosystems from environmental harm?
2. Is it ever permissible to break the law to save an animal or protect the environment?

POST-VIEWING QUESTIONS

1. What does it mean for activists to "go too far?" Is there a role for radicals and extremists in the mainstream environmental movement? How might radicals help the mainstream movement?
2. How important are the media and images in changing the way people think about issues? How do activists use the media and images to achieve their goals? What are "mind bombs" and how do they work? What are some examples of "mind bombs" that we see every day?
3. According to what you've seen in the news, what does an environmentalist look like? Do you think this depiction is accurate? How does it affect how you think about environmental issues?
4. Are alternatives all about stopping bad things from happening or are they also about developing new ideas and solutions to environmental problems? How do alternatives fit in the mainstream environmental movement?

BEYOND THE CLASSROOM

1. Using the personal ecological footprint calculator, estimate your ecological footprint. Use the "explore scenarios" option to identify areas where you think you need to do better. Choose three areas you think you have the best chance of improving. Make a detailed plan to shrink those parts of your ecological footprint in your everyday actions for one year.
2. While Greenpeace, Sea Shepherd, and environmental activists around the world succeeded in getting the International Whaling Commission to ban whaling, whaling continues. Why, what is the impact, and what's next? Research the real effects of the ban (for instance, increases in whale populations after 1986). Who continues to hunt whales, and who is consuming whale meat? Where does saving the whales fit in twenty-first century priorities to protect the health of our oceans?

> *The theme that runs through all these movements is the loss of the commons. That's what people are fighting for, is the right of subsistence and the right of access to clean water, to food, to forests. The right to live.*
>
> **Vijaya Nagarajan**

ACT IV: GOING GLOBAL

The world's forests are home to nearly ninety percent of terrestrial biodiversity and hold over forty percent of global carbon stores. Worldwide, 1.6 billion people depend on forests for fuel, medicinal plants, and subsistence. Struggles to protect these important ecosystems and the livelihoods of people who depend on them are key to understanding the history of the environmental movement in the twentieth century. The ongoing fight to protect the Amazon rainforest from logging and industrial agriculture symbolizes global struggles to preserve both biological and cultural diversity.

By the 1980s, the Amazon faced threats from fossil fuel development, hydroelectric dams, logging, and industrial agriculture. Efforts to save the Amazon turned on an unlikely environmental hero, a union organizer and rubber tapper, or seringueiro, named Chico Mendes. The seringueiros had lived in the Amazon for generations eking out a modest living harvesting rubber from the rubber trees. When ranchers arrived in the remote western Amazon and began clearing land for cattle grazing, Mendes organized his fellow seringueiros to defend their homeland. Through direct nonviolent resistance, the seringueiros halted the clear-cutting of their forests for several ranching operations.

In 1986, Mendes allied with environmentalists protesting development financed by the World Bank and Inter-American Development Bank. The banks financed the paving of roads in the Amazon, facilitating the development of ranching operations the seringueiros were fighting. In Washington, D.C. Mendes and his U.S. allies lobbied members of Congress and met with the banks' funders, which ultimately led to negotiations between the seringueiros and bank officials. Mendes continued building alliances at home and abroad, eventually forming a national council of rubber tappers in Brazil.

Concluding that a lack of land use rights was preventing them from effectively defending the forest from loggers and ranchers, the council advocated the creation of rubber tapper reserves. In February 1988, Cachoeira was declared the first extractive reserve in the world. The work of the seringueiros sparked hatred amongst ranchers, and Mendes was assassinated later that year. Despite this tragic event, Mendes' work was a turning point in the struggle to save the Amazon.

The Brazilian government recognized the rights of forest peoples, setting aside 58 million acres in extractive reserves.

The battle waged to save the Amazon was part of a larger movement throughout the Global South that tied together indigenous rights, social justice, and environmental issues during the last quarter of the twentieth century. From India to Kenya, men and women organized to protect the natural resources upon which their livelihoods depend. Their struggles brought worldwide attention to questions of equity and sustainability in a global economic system dependent on the exploitation of natural resources and peoples.

PRE-VIEWING QUESTIONS

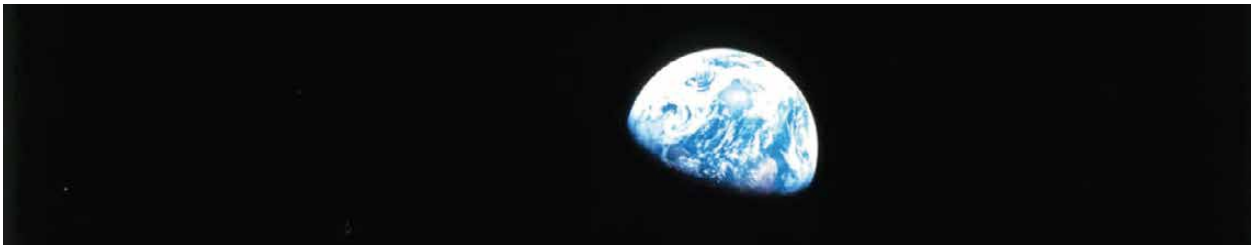
1. What are common resources all humans depend on? Who controls these resources and who profits from this control?
2. Why should people living in the United States be concerned with struggles over natural resources in the other parts of the world?
3. Is access to clean water, to food, and to forests a universal human right?

POST-VIEWING QUESTIONS

1. Compare and contrast the struggles of the seringueiros in Brazil, the Green Belt Movement in Kenya, and the Chipko movement in India. What resources sparked conflicts in each region? Who profited from control of these resources? What strategies did local people use to resist outside control of resources?
2. How did the movements in the Global South depicted in the film bring together social justice, indigenous rights, and environmental issues? Can these issues be separated when thinking about these movements? Why or why not?
3. Think about the major historical actors (people and institutions) in Act 4. Compare them to the actors in Love Canal, Hetch-Hetchy, and in the Greenpeace campaigns. What are some similarities and differences among environmental activists, their causes, and the strategies they used? Were they fighting against similar forces?

BEYOND THE CLASSROOM

1. Many of the products we consume are made of materials extracted from and produced in the developing world. Choose one product you consume or use on a daily basis and research where the raw materials from which it is manufactured originate. Possible examples include paper products, soy, beef, or wood products. Think about the people and environments that are affected through the manufacture of this product. How is your consumption tied to the land, water, people, plants, and animals that live in the places from where this product comes?
2. Think about the common resources you depend upon on a daily basis. Who controls the water you drink, the quality of air you breathe, or the natural resources required to produce your food? Identify one local environmental threat to at least one of these resources. What are people in your area doing to protect this common resource? How can you get involved?



There's no question in my mind that, as people who care deeply about the environment, we keep looking for love in all the wrong places. And that's from our political leaders. If we haven't learned yet, then we should get it now. This is not going to be top-down. It goes right back to the hundreds of millions of people on Earth who are trying to find and craft and create solutions every single day.

Paul Hawken

ACT V: CLIMATE CHANGE

Some have called global warming the "problem from hell." Its sources are numerous, and it is impossible to hone in on one particular issue to solve the problem. Political and economic influences further complicate the quest for a solution to what many agree is the greatest dilemma humankind has ever faced. Scientists have been aware of earth's rising temperatures since 1900, but it was not until the late 1980s that global warming gained widespread international attention.

The summer of 1988 was the hottest summer the continental United States had ever experienced. A congressional hearing was called that year to discuss the causes and long-term effects of climate change. The American public began learning about the "greenhouse effect" and how the growing rate of carbon emissions was trapping sunlight in the Earth's atmosphere, causing the planet to warm. In 1992 world leaders came together at the Earth Summit in Rio de Janeiro to sign a landmark treaty known as the United Nations Framework Convention on Climate Change. Yet, due to pressure from the United States—the largest producer of greenhouse gases and the world's largest economy—limits on greenhouses gases were voluntary rather than mandatory.

The political power of the oil and coal companies, along with labor unions and farm organizations, thwarted attempts at climate legislation in the United States. Deep resistance to any measure forcing industrial polluters to limit carbon emissions emerged in the public and political spheres. The energy industry countered climate scientists with its own science, launching a media campaign aimed at convincing Americans that humans were not changing the climate and that the economic cost of lowering greenhouse gas emissions was too high to justify changing their behavior. Climate change became a deeply divisive political issue. By 1997, there was a clear need for mandatory limits on carbon emissions on a global scale. The world's leaders gathered in Kyoto to negotiate a tougher treaty. While Europeans pushed for aggressive controls on global carbon emissions, the United States resisted any mandatory measures. Vice President Al Gore arrived at the last minute and urged the U.S. delegation to be more flexible in their negotiations. The United States signed the Kyoto

Protocol, agreeing to mandatory cutbacks. The treaty, however, was dead on arrival. It was never submitted for ratification, and, upon taking office in 2000, President George W. Bush rejected Kyoto.

Natural disasters brought the issue of climate change back to the forefront. Hurricane Katrina, a heat wave in Europe that killed 70,000 people, and widespread drought and fires in Australia and the American Southwest illustrated the human implications of climate change, motivating citizens across the globe to demand their governments take action. The number 350, the parts per million of carbon dioxide in the atmosphere considered safe by scientists, became a rallying call for global action. In December 2009, as world leaders gathered in Copenhagen for the United Nations' fifteenth conference on climate change, millions of citizens around the world staged marches and demonstrations with the hope that at last the United States and China, the world's biggest emitters of greenhouse gases, would join with the rest of the world's leaders in signing a global treaty. Copenhagen was, however, another example of top-down political failure. The United States refused to significantly reduce emissions and China backed out of negotiations. Deadlock and failure loomed when U.S. President Barrack Obama forged a last minute accord. But once again, this was simply a pledge exercise and subsequent attempts at climate legislation in the U.S. Congress died. The United States' unwillingness to take part in collective action to address climate change remains one of the biggest stumbling blocks in addressing the issue.

Despite the lack of action on the part of our political leaders, people around the globe are demanding climate action. Worldwide, over 2 million organizations are linking social justice, environmental issues, industrial pollution, and economic corruption in their struggles for climate justice. This growing global movement illustrates how environmentalism has shifted from saving wild places to saving humankind. If collective solutions to climate change are to be enacted, it is critical that each and every one of us do our part.

PRE-VIEWING QUESTIONS

1. What is global warming? What are some of the causes of global warming?
2. Is climate change a global issue? Does it require cooperative global solutions, or should individual countries and industries be permitted to address the problem on their own?
3. Is climate change simply an environmental issue, or does it also have social, cultural, and economic implications?

POST-VIEWING QUESTIONS

1. One scholar states that, "Climate change remains the impossible issue—impossible to deal with, yet impossible to ignore." Do you agree with this statement? Why or why not? Identify the political and economic challenges world leaders have contended with in their quest to address climate change on a global scale.
2. In the film, Bill McKibben, founder of 350.org, argues that global warming is too large an issue for the environmental movement to take on. Do you agree? If the environmental movement cannot fully take on this issue, who should?
3. Do you believe that addressing climate change is a social and moral responsibility? Why or why not?

BEYOND THE CLASSROOM

1. During the summer and fall of 2012, the climate change movement experienced a flowering of direct nonviolent action. Environmental activists around the country and world amped up their resistance to the development of fossil fuels, a significant contributor to global carbon emissions. Using Facebook as a resource, look up one organization engaging in direct nonviolent action to resist energy development and/or bring attention to the issue of climate change. What issues is the group addressing? What tactics and organizing strategies is the group employing? How is the group's resistance to energy development linked to the global movement to address climate change? Possible groups to explore include: Tar Sands Action Blockade, Coal Export Action, RAMPS Campaign, Frack OFF, Marcellus Protest and 350.org.
2. Across the globe, ordinary men and women are working in their own communities to address climate change on both a local and global level. Using 350.org as a resource, explore groups in your region. What issues are they working on? Are they collaborating

with groups in other parts of the country or globe? If there is not a local organization in your area, consider working with neighbors, friends, and colleagues to start one. A global inventory of many groups can be found at https://350.org/get-involved .

3. Addressing climate change requires a reevaluation of industrial society, global governance and cooperation, and the development and consumption of energy and resources. Explore the ways in which society needs to change. What does a sustainable world look like? What changes must we make? And finally, what is your role in making the transition to a sustainable world characterized by both environmental and social justice?

LEARN MORE

BOOKS AND ARTICLES

Carson, Rachel. *Silent Spring*. Ann Arbor: University of Michigan Press, 1962.

Gibbs, Lois Marie. *Love Canal and the Birth of the Environmental Health Movement*. Washington, DC: Island Press, 2010.

Gottlieb, Robert. *Forcing the Spring: The Transformation of the American Environmental Movement*. Washington, DC: Island Press, 2005.

Guha, Ramachandra. *Environmentalism: A Global History.* Ann Arbor: University of Michigan Press, 2000.

Hays, Samuel P. *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985*. Cambridge: Harvard University Press, 1989.

Hawken, Paul. *Blessed Unrest: How the Largest Movement in the World Came into Being and Why No One Saw It Coming.* New York: Penguin, 2007.

Hawken, Paul, Amory B. Lovins, and L. Hunter Lovins. *Natural Capitalism: The Next Industrial Revolution*. Washington, DC: Earthscan, 1999.

Hertsgaard, Mark. *Hot: Living Through the Next Fifty Years on Earth*. New York: Houghton Mifflin Harcourt, 2011.

Kirk, Andrew. *Counterculture Green: The Whole Earth Catalog and American Environmentalism*. Lawrence: University of Kansas Press, 2009.

Kolbert, Elizabeth. *Field Notes from A Catastrophe: Man, Nature, and Climate Change.* New York: Bloomsbury USA, 2006.

Lovins, Amory B., et. al. *Reinventing Fire: Bold Business Solutions for The New Energy Era*. White River Junction, VT: Chelsea Green Publishing Co., 2011.

McKibben, Bill, ed. *American Earth: Environmental Writing Since Thoreau*. Ann Arbor: University of Michigan Press, 2008.

McKibben, Bill. *Earth: Making a Life on a Tough New Planet*. New York: Random House, 2011

McKibben, Bill. *The End of Nature.* New York: Random House, Inc., 2006.

Montrie, Chad. *A People's History of Environmentalism in the United States.* New York: Continuum International Publishing Group, 2011.

Nash, Roderick. *Wilderness and the American Mind*. New Haven: Yale University Press, 1967.

Quammen, David. The Song of the D*odo: Island Biogeography in an Age of Extinctions*. New York: Random House, Inc., 2012.

Rodrigues, Gomercindo. *Walking the Forest with Chico Mendes: Struggle for Justice in the Amazon*. Austin: University of Texas Press, 2007.

Shabecoff, Philip. *A Fierce Green Fire: The American Environmental Movement*. Washington, DC: Island Press, 2003

Shabecoff, Philip. *Earth Rising: American Environmentalism in the 21st Century*. Washington, DC: Island Press, 2001.

Shabecoff, Philip, and Alice Shabecoff. *Poisoned for Profit: How Toxins Are Making Our Children Chronically Ill*. New York: Random House, Inc., 2008.

Udall, Stewart. *The Quiet Crisis*. New York: Henry Hold & Co., Inc., 1963.

Weart, Spencer R. *The Discovery of Global Warming*. Cambridge: Harvard University Press, 2004.

Weyler, Rex. *Greenpeace: How a Group of Ecologists, Journalists, and Visionaries Changed the World*. Emmaus, PA: Rodale, Inc., 2004.

INTERNET RESOURCES

The Discovery of Global Warming: A Hypertext History of How Scientists Came to (Partly) Understand What People Are Doing to Cause Climate Change https://history.aip.org/climate/index

The Environmental History Timeline http://www.environmentalhistory.org

Global Footprint Network https://footprintnetwork.org/en/index.php/GFN/

The Green Belt Movement http://www.greenbeltmovement.org/

Greenpeace https://greenpeace.org

Love Canal Collections: A University Archives Collection https://library.buffalo.edu/archives/lovecanal/collections/

National Center for Appropriate Technology http://www.ncat.org/

Sierra Club https://sierraclub.org

United States Environmental Protection Agency https://www.epa.gov

350.org https://350.org

FILMS

An Inconvenient Truth. Directed by Davis Guggenhem.
Produced by Lawrence Bender, Scott Z. Burns, and Laurie David. 2006.

Blue Vinyl. Directed and Produced by Judith Helfand and Daniel B. Gold. 2002. http://www.bullfrogfilms.com/catalog/bv.html

Cape Spin: An American Power Struggle. Directed by Robbie Gemmel and John Kirby. Produced by Robbie Gemmel, Daniel Coffin, Libby Handros, Josh Levin, Jim Butterworth, Daniel Chalfen, Marcel Quiroga, and Steven Latham. 2012.

Deep Down: A Story from the Heart of Coal Country. Directed by Jen Gilomen and Sally Rubin. Produced by David Sutherland and Nancy Golden. 2010.

Dirty Business: "Clean Coal" and the Battle for Our Energy Future. Directed and Produced by Peter Bull. 2011. http://www.bullfrogfilms.com/catalog/dbiz.html

Force of Nature: The David Suzuki Movie. Directed by Sturla Gunnarsson. Produced by Sturla Gunnarsson, Yves J. Ma, Janice Tufford. 2010. http://www.bullfrogfilms.com/catalog/fon.html

For Earth's Sake. Directed by John de Graaf. Produced by KCTS. 1989. http://www.bullfrogfilms.com/catalog/dave.html

Fuel: Uncovering America's Dirty Secret. Directed and Produced by Josh Tickell. 2009.

Gasland. Directed by Josh Fox. Produced by Trish Adlesic, Molly Gandour, Josh Fox, and David Roma. 2010.

Homeland: Four Portraits of Native Action. Directed and Produced by Roberta Grossman. 2005. http://www.bullfrogfilms.com/catalog/hland.html

In Our Own Backyards: The First Love Canal. Directed and Produced by Lynn Corcoran. 1982. http://www.bullfrogfilms.com/catalog/lc.html

Living the Good Life with Helen and Scott Nearing. Directed by John Hoskyns-Abrahall. Produced by Bullfrog Films. 1977. http://www.bullfrogfilms.com/catalog/lgl.html

Lovins on the Soft Path: An Energy Future with a Future. Directed by George C. Lynde, Jr. Produced by Nelson B. Robinson. 1982. http://www.bullfrogfilms.com/catalog/losp.html

Monumental: David Brower's Fight For Wild America. Directed by Kelly Duane. Produced by Loteria Films. 2004. http://www.bullfrogfilms.com/catalog/mdave.html

Shattered Sky. Directed by Steve Dorst and Dan Evans. Produced by Dorst MediaWorks. 2012. http://www.bullfrogfilms.com/catalog/ssky.html

Sun Come Up. Directed by Jennifer Redfearn. Produced by Jennifer Redfearn and Tim Metzger. 2010.

The Cove. Directed by Louie Psihoyos. Produced by Fisher Stevens and Paula DuPre Pesmen. 2009.

Who Killed the Electric Car? Directed by Chris Paine. Produced by Jessie Deeter. 2006.

The Four Corners: A National Sacrifice Area? Directed by Christopher McLeod. Produced by Christopher McLeod, Glenn Switkes, and Randy Hayes. 1984. http://www.bullfrogfilms.com/catalog/4c.html

NATIONAL STANDARDS CORRELATIONS

APPLICABLE MCREL STANDARDS: LEVEL IV [GRADE 9–12]

Civics

Standard 1: Understands ideas about civic life, politics, and government

- Benchmark 1: Understands how politics enables a group of people with opinions and/or interests to reach collective decisions, influence decisions, and accomplish goals that they could not reach as individuals
- Benchmark 2: Knows formal institutions that have authority to make and implement binding decisions

Standard 2: Understands the essential characteristics of limited and unlimited goverments

- Benchmark 1: Understands what "civil society" is and how it provides opportunities for individuals to associate for social, cultural, religious, economic, and political purposes
- Benchmark 2: Understands how civil society allows for individual or groups to influence government in ways other than voting and elections

Standard 10: Understands the roles of voluntarism and organized groups in American social and political life

- Benchmark 2: Knows how voluntary association and other organized groups have been involved in functions usually associated with government
- Benchmark 6: Knows the historical and contemporary role of various organized groups in local, state, and national politics

Standard 14: Understands issues concerning the disparities between ideals and reality in American political and social life

- Benchmark 2: Knows discrepancies between American ideals and the realities of American social and political life
- Benchmark 3: Knows historical and contemporary efforts to reduce discrepancies between ideals and reality in American public life

Standard 19: Understand what is meant by "the public agenda," how it is set, and how it is influenced by public opinion and the media

- Benchmark 2: Understands why issues important to some groups and the nation do not become part of the public agenda
- Benchmark 6: Understands the ways in which television, radio, the press, newsletters, and emerging means of communications influence American politics

Standard 21: Understands the formation and implementation of public policy

- Benchmark 3: Knows the points at which citizens can monitor or influence the process of public policy formation

Standard 22: Understands how the world is organized politically into nation-states, how nation-states interact with one another, and issues surrounding U.S. foreign policy

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- Benchmark 6: Understands how and why domestic politics may impose constraints or obligations on the ways in which the United States acts in the world

Standard 23: Understands the impact of significant and nonpolitical developments on the United States and other nations

- Benchmark 1: Understands the influence that American ideas about rights have abroad and how other peoples' ideas about rights have influenced Americans
- Benchmark 5: Understands historical and contemporary responses of the Ameri can government to demographic and environmental changes that affect the United States
- Benchmark 6: Knows some of the principle economic, technological, and cultural effects the United States had on the world

Standard 28: Understands how participation in civic and political life can help citizens attain individual and public goals

- Benchmark 2: Understands what distinguishes participation in government and political life from nonpolitical participation in civil society and private life, and understands the importance of both forms of participation to American constitutional democracy
- Benchmark 3: Knows the many ways citizens can participate in the political processes at local, state, and national levels, and understands the usefulness of other forms of political participation in influencing public policy
- Benchmark 4: Knows historical and contemporary examples of citizen movements seeking to expand liberty, to insure equal rights of all citizens, and/or to realize other values fundamental to American constitutional democracy
- Benchmark 5: Understands the importance of voting as a form of political participation

Economics

Standard 10: Understands basic concepts about international economics

- Benchmark 6: Understands that public policies affecting foreign trade impose costs and benefits on different groups of people, and that decisions on these policies reflect economic and political interests and forcesBenchmark 6: Understands how and why domestic politics may impose constraints or obligations on the ways in which the United States acts in the world

Geography

Standard 4: Understands the physical and human characteristics of place

- Benchmark 3: Knows the locational advantages and disadvantages of using places for different activities based on their physical characteristics

Standard 8: Understands the characteristics of ecosystems on Earth's surface

- Benchmark 1: Understands how relationships between soil, climate, and plant and animal life affect the distribution of ecosystems
- Benchmark 2: Knows ecosystems in terms of their biodiversity and productivity and their potential value to all living things
- Benchmark 3: Knows the effects of biological magnification in ecosystems
- Benchmark 4: Knows the effects of both physical and human changes in ecosystems

Standard 14: Understands how human actions modify the physical environment

- Benchmark 1: Understands how the concepts of synergy, feedback loops, carrying capacity, and thresholds relate to the limitations of the physical environment to absorb the impacts of human activity
- Benchmark 2: Understands the role of humans in decreasing the diversity of flora and fauna in a region
- Benchmark 3: Understands the global impacts of human changes in the physical environment
- Benchmark 4: Knows how people's changing attitudes toward the environment have led to landscape changes

Standard 16: Understands the changes that occur in the meaning, use, distribution, and importance of resources

- Benchmark 3: Understands the impact of policy decisions regarding the use of resources in different regions of the world

Standard 18: Understands global development and environmental issues

- Benchmark 1: Understands the concept of sustainable development and its effects in a variety of situations
- Benchmark 2: Understands why policies should be designed to guide the use and management of Earth's resources and to reflect multiple points of view
- Benchmark 3: Understands contemporary issues in terms of Earth's physical and human systems

Health

Standard 2: Knows environmental and external factors that affect individual community health

- Benchmark 3: Understands how the environment influences the health of the community

Historical Understanding

Standard 1: Understands and knows how to analyze chronological relationships and patterns

- Benchmark 2: Understands historical continuity and change related to a particular development or theme

Standard 2: Understands the historical perspective

- Benchmark 1: Analyzes the values held by specific people who influenced history and the role their values played in influencing history
- Benchmark 2: Analyzes the influences specific ideas and beliefs had on a period of history and specifies how events might have been different in the absence of those ideas and beliefs
- Benchmark 4: Analyzes the effects specific decisions had on history and studies how things might have been different in the absence of those decisions
- Benchmark 10: Understands how the past affects our lives and society in general

History, United States

Standard 16: Understands how the rise of corporations, heavy industry, and mechanized farming between 1870 and 1900 transformed American society

- Benchmark 5: Understands how rapid increase in population and industrial growth in urban areas influenced the environment

Standard 20: Understands how Progressives and others addressed problems of industrial capitalism, urbanization, and political corruption between 1890 and 1930

- Benchmark 2: Understands major social and political issues of the Progressive era
- Benchmark 3: Understands how the Progressive movement influenced different groups in American society

Standard 26: Understands the economic boom and social transformation of post-World War II United States

- Benchmark 1: Understands scientific and technological developments in America after World War II
- Benchmark 2: Understands influences on the American economy after World War II
- Benchmark 3: Understands the socioeconomic factors of the post-World War II period in America
- Benchmark 4: Understands social, religious, cultural, and economic changes at The onset of the Cold War era

Standard 27: Understands how the Cold War and conflicts in Korea and Vietnam influenced domestic and international policies

- Benchmark 3: Understands the social issues that resulted from U.S. involvement in the Vietnam War

Standard 28: Understand the domestic politics in the post-World War II period

- Benchmark 4: Understands characteristics of the Johnson presidency

Standard 30: Understands developments in foreign policy and domestic politics between the Nixon and the Clinton presidencies

- Benchmark 1: Understands how the Nixon, Ford, and Carter administrations deal with major domestic issues
- Benchmark 4: Understands the major economic issues from the Reagan through the Clinton presidencies

History, World

Standard 44: Understands the search for community, stability, and peace in an interdependent world

- Benchmark 2: Understands rates of economic development and the emergence of different economic systems around the globe
- Benchmark 3: Understands major reasons for the great disparities between industrialized and developing nations
- Benchmark 4: Understands the oil crisis and its aftermath in the 1970s
- Benchmark 10: Understands the effectiveness of United Nations programs

Standard 45: Understands major global trends since World War II

- Benchmark 2: Understands causes of economic imbalances and social inequalities among the worlds' peoples and efforts made to close these gaps

Language Arts

Standard 2: Uses the stylistic and rhetorical aspects of writing

Standard 3: Uses grammatical and mechanical conventions in written compositions

Standard 9: Uses viewing skills and strategies to understand and interpret visual media

Science

Standard 1: Understand atmospheric processes and the water cycle

- Benchmark 2: Knows the processes involved in the water cycle and their effects on climatic patterns
- Benchmark 3: Knows that the Sun is the principle energy source for phenomena on the Earth's surface

Standard 6: Understands the relationship between organisms and their physical environment

- Benchmark 5: Knows ways in which humans can alter the equilibrium of ecosystems, causing potentially irreversible effects

Technology

Standard 3: Understands the relationships among science, technology, society, and the individual

- Benchmark 3: Knows that alternatives, risks, costs, and benefits must be considered when deciding on proposals to introduce new technologies or to curtail existing ones
- Benchmark 7: Knows that technology can benefit the environment by providing scientific information, providing new solutions to older problems, and reducing the negative consequences of existing technology

Thinking and Reasoning

Standard 1: Understands and applies the basic principles of presenting an argument (all benchmarks)